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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/541,055

03/06/2006

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28395 7590 08/14/2008  
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EXAMINER

PANG, ROGER L

ART UNIT

PAPER NUMBER

3681

MAIL DATE

DELIVERY MODE

08/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/541,055	<b>Applicant(s)</b> GRABOWSKI ET AL.	
	<b>Examiner</b> Roger L. Pang	<b>Art Unit</b> 3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10 and 14-35 is/are pending in the application.
- 4a) Of the above claim(s) 15-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10, 14 and 32-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6-29-05 &amp; 5-5-06 &amp; 5-23-08</u> .                      | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

The following action is in response to the election filed for application 10/541,055 on May 23, 2008.

#### ***Election/Restrictions***

Claims 15-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on May 23, 2008.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to both claims, the limitation of “the low operating speed range of the powertrain” lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-7, 10 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by

Severinsky '088. With regard to claim 1, Severinsky teaches a powertrain, comprising:

a primary power generating system for generating a primary drive torque, the primary power system having a hydrogen-fuelled internal combustion engine operating with a lean hydrogen gas fuel mixture (Col. 6), the internal combustion engine having at least one air charge boosting device 100 for increasing the primary drive torque at a range of operating speeds of the powertrain; and a secondary power generating system having at least one electric torque generating device 25 for generating a secondary drive torque, the secondary power generating system being constructed and arranged such that the secondary drive torque complements the boosted primary drive torque over at least a low operating speed range of the powertrain (Col. 47). With regard to claim 2, Severinsky teaches the powertrain, wherein the primary power generating system comprises at least one intercooling device 117. With regard to claim 4, Severinsky teaches the powertrain, wherein the primary power generating system comprises a front end accessory assembly 21 optimized for reducing noise, vibration and harshness (NVH) associated with the powertrain. With regard to claim 5, Severinsky teaches the powertrain, wherein the primary power generating system is shielded with a sound absorbing barrier to reduce NVH emanating from the air charging device (housing). With regard to claim 6,

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Severinsky teaches the powertrain, wherein the secondary power generating system comprises an electrical motor/generator 25. With regard to claim 7, Severinsky teaches the powertrain, further comprising a disconnect clutch 51 disposed between the primary generating power system and the secondary power generating system for engaging and disengaging the primary power generating system from the secondary power generating system and for transferring the boosted primary driver torque through the secondary power generating system. With regard to claim 19, Severinsky teaches the powertrain, further comprising a power transmission system 33 coupled to the output of the secondary power generating system for receiving a combination of the boosted primary drive torque and the secondary drive torque, the combination of the boosted primary drive torque and the secondary drive torque having an enhanced torque characteristic over at least the low operating speed range of the powertrain (Col. 51). With regard to claim 14, Severinsky teaches the transmission, further comprising: a disconnect clutch 51 disposed between the primary generating power system 25 and the secondary power generating system for engaging and disengaging the primary power generating system from the secondary power generating system and for transferring the boosted primary driver torque through the secondary power generating system; and a power transmission system 33 coupled to the output of the secondary power generating system for receiving a combination of the boosted primary drive torque and the secondary drive torque, the combination of the boosted primary drive torque and the secondary drive torque having an enhanced torque characteristic over at least the low operating speed range of the powertrain (Col. 51), the secondary power generating system, the disconnect clutch and the power transmission system being packaged as a modular hybrid transmission system (Fig. 14).

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Severinsky as applied to claim 1 above, and further in view of Emmerling '439. Severinsky teaches the powertrain, wherein the primary power generating system comprises an intercooler 17, but lacks the teaching of said intercooler being a dual stage intercooler. Emmerling teaches a boosted system comprising of a dual stage intercooling device 44/46. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Severinsky to employ a dual stage intercooler in view of Emmerling in order to provide a more efficient way to cool the charge air prior for supply thereof to the engine (Col. 2).

Claims 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi '968 (from IDS) in view of Kanehara '425 (from IDS). With regard to claim 32, Shiraishi teaches a method for sensing and responding to a backfire arising in the intake system of a hydrogen fuelled reciprocating internal combustion engine, comprising the steps of: sensing a backfire (Col. 7, lines 49-50); and shutting off the hydrogen fuel to the engine when a backfire is sensed (Col. 4, lines 51-55). Shiraishi lacks the teaching of sensing the backfire by sensing the temperature within the intake system. Kanehara teaches that a backfire can be detected when a temperature within the intake system is sensed to be high (Col. 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shiraishi to sense the

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temperature of the intake system to detect backfiring in view of Kanehara in order to provide a more accurate means to sense the backfiring of the system. With regard to claim 35, Shiraishi teaches the method, further comprising the step of resuming fuelling of the engine with hydrogen once a backfire event has ceased (start up).

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi in view of Kanehara as applied to claim 32 above, and further in view of Urasawa '908. Shiraishi teaches the method, but lacks the teaching of a step of increasing the output torque of an electric drive system associated with the engine in the event the hydrogen fuel is shut off. Urasawa teaches a hybrid transmission wherein an electric drive system associated with an engine will increase output torque in the event that the engine is shut off (page 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shiraishi to employ the step of increasing the output torque of an electric drive system associated with the engine in the event the hydrogen fuel is shut off in further view of Urasawa in order to maintain drive to eliminate the feeling of torque loss.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi in view of Kanehara as applied to claim 32 above, and further in view of Maack '924. Shiraishi teaches the method, but lacks the teaching of a step of sensing a backfire by sensing the pressure within the engines intake system. Maack teaches a vehicle, wherein an indication of backfiring can come from detected rapid positive fluctuations (Col. 1). It would have been obvious to one of ordinary skill at the time of the invention to modify Shiraishi to employ a pressure detection for backfiring in further view of Maack in order to provide an addition positive test for engine backfiring.

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### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Severinsky '391, Geisse, Ohkumo, Masberg '893 and '784 have been cited to show similar vehicle controls.

### **FACSIMILE TRANSMISSION**

Submission of your response by facsimile transmission is encouraged. The central facsimile number is (571) 273-8300. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check.



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Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on \_\_\_\_\_ (Date)

Typed or printed name of person signing this certificate:

\_\_\_\_\_  
\_\_\_\_\_

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roger L. Pang whose telephone number is 571-272-7096. The examiner can normally be reached on 5:30am to 4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roger L Pang/  
Primary Examiner, Art Unit 3681

Roger L Pang  
Primary Examiner  
Art Unit 3681

August 12, 2008